

CLAIMS

Sub B1

1. A continuous method of cutting a plurality of moist substrates comprising:

- a) placing a log of moist substrate on a conveyor, the log having a length, a width and a moisture content of at least about 50%;
 - b) advancing the conveyor;
 - c) discharging the log from the conveyor onto a transfer plate;
 - d) placing the log into a pocket on a cutting support;
 - e) advancing the pocket containing the log toward a plurality of cutting blades;
 - f) advancing the pocket containing the log through the cutting blades, whereby the log is cut into a number of shorter rolls;
 - g) advancing the pocket containing the rolls away from the cutting blades;
 - h) discharging the rolls from the pocket; and,
- repeating steps a) through h) in a continuous manner.

2. The method of claim 1, wherein the log is at least 2540 mm long.

3. The method of claim 1, wherein the log has a diameter of from about 50 mm to about 140 mm.

4. The method of claim 1, wherein at least 95% of the log is cut into useable rolls.

5. A method of cutting a coreless wet wipes log comprising:

- a) placing a coreless wet wipes log in a pocket, the log having a length of at least 2540 mm, a diameter of from about 50 mm to about 140 mm and a moisture content of at least 50%;
- b) advancing the pocket containing the log toward a cutting position;
- c) cutting the log into a plurality of rolls in the cutting position;

d) the pocket maintaining the shape, integrity and position of the log as it is cut into rolls without the need for clamps and without the need for a mandrel; and,

e) discharging the rolls from the pocket.

5 6. The method of claim 5, wherein steps a) through e) are repeated in a continuous process resulting in the production of at least 300 rolls per minute.

7. The method of claim 5, wherein a conveyor is used to place the logs in the pockets.

10 8. The method of claim 5, wherein the rolls are discharged into a diverter.

9. The method of claim 5, wherein at least 95% of the log is cut into useable rolls.

15 10. A method of making a plurality of wet wipes rolls comprising:

a) placing a wet wipes log on a conveyor, the log having a length, a width and a moisture content of at least about 65%;

b) advancing the conveyor;

c) discharging the log from the conveyor into a holding support;

20 d) advancing the support containing the log toward a plurality of cutting blades;

e) engaging the log and the cutting blades, whereby the log is sectioned into a plurality of rolls; and,

repeating steps a) through e) so that at least 300 rolls are produced per minute.

25 11. The method of claim 10, wherein the log is at least 2540 mm long.

12. The method of claim 10, wherein the log has a diameter of from about 50 mm to about 250 mm.

13. The method of claim 10, wherein at least 95% of the log is cut into useable rolls.

14. A continuous method of cutting a plurality of wet wipes logs comprising:

- a) placing a coreless wet wipes log on a conveyor, the log having a length, a width and a moisture content of at least about 50%;
- b) advancing the conveyor;
- c) discharging the log from the conveyor onto a transfer plate;
- d) metering the rate at which the log is discharged from the transfer plate to a pocket;
- e) advancing the pocket containing the log toward a plurality of cutting blades;
- f) engaging the log in the pocket with the cutting blades, whereby the log is cut into a number of shorter rolls;
- g) discharging the rolls from the pocket;
- h) repeating steps a) through g) in a continuous manner; and, periodically interrupting the repetition of steps a) through g) to move the cutting blades to a position away from pocket; and, honing the cutting blades while in the away position, whereby material from the honing does not contaminate the pocket, the log, or the rolls.

15. The method of claim 14, wherein the log is at least 2540 mm long.

16. The method of claim 14, wherein the log has a diameter of from about 50 mm to about 140 mm.

17. The method of claim 14, wherein at least 95% of the log is cut into useable rolls.

18. A cutting apparatus comprising:
a base; a plurality of pockets; a drive; and a saw;
the plurality of pockets arranged in an endless loop; the drive associated with the pockets; the saw associated with the pockets; the pockets

having channels therein; the saw having a cutting surface; the cutting surface being capable of being positioned within a channel; the pockets having a front side, a bottom and a back side; the front side having a lip; and the back side having a flat surface.

5 19. The cutting apparatus of claim 18, wherein the saw comprises at least 10 blades.

20. The cutting apparatus of claim 18, comprising at least 4 pockets.

10 21. The cutting apparatus of claim 18, wherein the pockets have a distance between the front side and back side, the distance being from about 50 mm to about 250 mm.

22. A cutting apparatus comprising:

 a base; a sprocket; a plurality of pockets spaced around the sprocket; a drive; and a saw;

15 the drive associated with the sprocket; the saw associated with the sprocket; the pockets having a plurality of channels therein; the saw having a plurality of blades; the blades capable of being positioned within the channels; the pockets having a front side, a bottom and a back side; the front side having an arcuate lip; the front side having an flat surface; the bottom side having an arcuate surface; and the back side having a flat surface; the front and bottom surface forming a support surface that maintains the shape and form of the object during cutting.

20 23. The cutting apparatus of claim 22, wherein the saw comprises at least 10 blades.

24. The cutting apparatus of claim 22, comprising at least 4 pockets.

25 25. The cutting apparatus of claim 22, wherein the width of the pockets is from about 50 mm to about 150 mm.

26. A system for making rolls of wipes, the system comprising:

a first metering device; a first transporting device; a second metering device; a second transporting device; a cutting device; a holding device; and a third transporting device;

5 the first metering device associated with the first transporting device; the second metering device associated with both the first transporting device and the second transporting device; the second transporting device associated with the holding device; the cutting device associated with the second transporting device; the third transporting device associated with the second transporting device;

10 the first metering device comprising a first controller and a first gate; the first transporting device comprising a first drive, a second controller, a base, a frame and a plurality of pockets; the second metering device comprising a third controller and a second gate; the third transporting device comprising a second drive, a fourth controller, a diverting device, and a holding device; and, the cutting device comprising a plurality of blades, a third drive, and a fifth controller.

15 27. The system of claim 26, wherein the controllers are the same.

28. The system of claim 26, comprising a master controller; the master controller associated with the controllers.

20 29. The system of claim 26, wherein the cutting device comprises at least 10 stainless steel blades.

30. The system of claim 26, comprising a honing device associated with the cutting device.

25 31. A method of cutting a plurality of flexible substrates comprising:
a) placing a flexible log on a conveyor, the log having a length and a width;
b) advancing the conveyor;
c) discharging the log from the conveyor into a holding support;

d) advancing the support containing the log toward a plurality of cutting blades;

e) engaging the log and the cutting blades, whereby the log is sectioned into a plurality of rolls; and,

5 repeating steps a) through e) so that at least 300 rolls are produced per minute.

32. The method of claim 31, wherein the log is at least 2540 mm long.

33. The method of claim 31, wherein the log has a diameter of from about 50 mm to about 250 mm.

10 34. The method of claim 31, wherein at least 95% of the log is cut into useable rolls.

35. A continuous method of cutting a plurality of flexible logs comprising:

15 a) placing a flexible log on a conveyor, the log having a length and a width;

b) advancing the conveyor;

c) discharging the log from the conveyor onto a transfer plate;

d) metering the rate at which the log is discharged from the transfer plate to a pocket;

20 e) advancing the pocket containing the log toward a plurality of cutting blades;

f) engaging the log in the pocket with the cutting blades, whereby the log is cut into a number of shorter rolls;

g) discharging the rolls from the pocket;

25 h) repeating steps a) through g) in a continuous manner; and, periodically interrupting the repetition of steps a) through g) to move the cutting blades to a position away from pocket; and,

honing the cutting blades while in the away position, whereby material from the honing does not contaminate the pocket, the log, or the rolls.

36. The method of claim 35, wherein the log is at least 2540 mm long.

37. The method of claim 35, wherein the log has a diameter of from about 50 mm to about 140 mm.

38. The method of claim 35, wherein at least 95% of the log is cut into useable rolls.

39. A continuous method of cutting a plurality of substrates comprising:

- a) placing a log of substrate on a conveyor, the log having a length and a width;
 - b) advancing the conveyor;
 - c) discharging the log from the conveyor onto a transfer plate;
 - d) placing the log into a pocket on a cutting support;
 - e) rotating the pocket containing the log toward a plurality of circular cutting blades;
 - f) rotating the pocket containing the log through the circular cutting blades, whereby the log is cut into a number of shorter rolls;
 - g) rotating the pocket containing the rolls away from the cutting blades;
 - h) discharging the rolls from the pocket; and,
- repeating steps a) through h) in a continuous manner.